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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,926	11/09/2001	Eric D. Morrison	456.003US1	5615

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MARK A. LITMAN & ASSOCIATES, P.A.
York Business Center
Suite 205
3209 W. 76th St.
Edina, MN 55402

EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

5

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-5

Office Action Summary

Application No.

10/010,926

Applicant(s)

MORRISON ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-12, 14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsubuko et al. (U.S. 4,360,580).

Tsubuko et al. disclose liquid ink or developer comprising carrier liquid having Kauri-Butanol less than 30 such as aliphatic hydrocarbon, organosol, and carbon black surface treated with polymer obtained from nitrogen-containing polymerizable monomer such as vinyl pyrrolidone (col.2, lines 9-11 and 17-18, col.4, lines 9-18, 30, and 31-40, col.5, line 65-col.6, line 7, and col.8, lines 54-59).

In light of the above, it is clear that Tsubuko et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5, 11-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uytterhoeven et al. (U.S. 4,663,265) in view Baker et al. (U.S. 5,698,616).

Uytterhoeven et al. disclose process for making liquid ink, i.e. developer, comprising the steps of dissolving polymer in solvent with Kauri-Butanol number greater than 30 such as ethanol, dispersing pigment particles in the polymer solution to form pigment dispersion,

removing solvent to form treated pigment, and then dispersing the treated pigment in carrier liquid which has Kauri-Butanol number less than 30 such as aliphatic hydrocarbon. The polymer is obtained from nitrogen-containing polymerizable monomer such as N-vinyl pyrrolidone and dialkylaminoalkyl (meth)acrylate. It is further disclosed that a charge director is added during any of the above steps (col.2, lines 46-61, col.3, lines 38-41, 48-49, and 64, col.4, lines 35-36, col.5, lines 29-31, col.10, lines 8-27, 39-42, and 49-68, col.11, lines 64-68, and col.12, lines 8-10).

The difference between Uyterhoeven et al. and the present claimed invention is the requirement in the claims of dispersing the pigment in organosol.

Uyterhoeven et al. disclose dispersing the treated pigment in carrier liquid having Kauri-Butanol number less than 30, however, there is no disclosure of organosol.

Baker et al., which is drawn to liquid ink, disclose dispersing pigment in organosol containing carrier liquid having Kauri-Butanol number less than 30 wherein the organosol is used in order to improve the sedimentation stability of the pigment without comprising print quality or ink transfer performance (col.5, lines 35-50 and col.45, lines 15-35).

In light of the motivation for using organosol disclosed by Baker et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such organosol in Uyterhoeven et al. in order to improve the sedimentation stability of the pigment without comprising print quality or ink transfer performance, and thereby arrive at the claimed invention.

6. Claims 6-7, 10-13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou (U.S. 5,358,822) in view of Baker et al. (U.S. 5,698,616).

Hou discloses method for making liquid ink, i.e. liquid toner, comprising the steps of dissolving polymer such as polyamide having molecular weight of, for instance, 50,000 in solvent with Kauri-Butanol number greater than 30 such as methanol, ethanol, and propanol, dispersing pigment particles in the polymer solution to form pigment dispersion, precipitating treated pigment, and dispersing treated pigment in carrier liquid which has Kauri-Butanol number less than 30 such as aliphatic hydrocarbon (col.1, lines 9-17, col.4, lines 26-27, col.5, lines 54-55, col.6, lines 55-65, col.7, lines 16-17 and 45-49, and col.8, lines 30-32).

The difference between Hou and the present claimed invention is the requirement in the claims of dispersing the pigment in organosol.

Hou discloses dispersing the treated pigment in carrier liquid having Kauri-Butanol number less than 30, however, there is no disclosure of organosol.

Baker et al., which is drawn to liquid ink, disclose dispersing pigment in organosol containing carrier liquid having Kauri-Butanol number less than 30 wherein the organosol is used in order to improve the sedimentation stability of the pigment without comprising print quality or ink transfer performance (col.5, lines 35-50 and col.45, lines 15-35).

In light of the motivation for using organosol disclosed by Baker et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such organosol in Hou in order to improve the sedimentation stability of the pigment without comprising print quality or ink transfer performance, and thereby arrive at the claimed invention.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hou in view of Baker et al. as applied to claims 6-7, 10-13, and 15-16 above, and further in view of Uytterhoeven et al. (U.S. 4,663,265)

The difference between Hou in view of Baker et al. and the present claimed invention is the requirement in the claims that the pigment dispersion comprises charge director.

Uytterhoeven et al., which is drawn to liquid ink or developer, disclose adding charge director anytime during the process of making the ink including to the pigment dispersion in order to control the sensitivity of the toner particles (col.12, lines 1-12).

In light of the motivation for using charge director disclosed by Uytterhoeven et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to add charge director to the pigment dispersion of the process of Hou in order to control the sensitivity of the toner particles, and thereby arrive at the claimed invention.

8. Claims 6-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (U.S. 5,698,616) in view of Hopfenberg et al. (U.S. 3,904,562).

Baker et al. disclose process for making liquid ink composition by dispersing colorant in organosol containing carrier liquid with Kauri-Butanol number less than 30 (col.1, lines 7-11, col.4, lines 16-21 and 35-39, and col.45, lines 15-35).

The difference between Baker et al. and the present claimed invention is the requirement in the claims of specific type of colorant.

Hopfenberg et al. disclose organic pigment with uniform coating of vinyl pyrrolidone polymer wherein the polymer is precipitated onto pigment by adding pigment to aqueous

solution of polymer followed by precipitating the polymer onto the surface of the pigment to encapsulate the pigment. The polymer-encapsulated pigment is suitable for use in printing inks. The motivation for using such polymer-encapsulated pigment is that they have superior bleed resistance, light fastness, and impart gloss (abstract, col.1, line 25, lines 2, 33-45 and 56-50).

In light of the motivation for using specific colorant disclosed by Hopfenberg et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polymer encapsulated pigment in the liquid ink of Baker et al. in order to produce glossy ink with superior bleed resistance and light fastness, and thereby arrive at the claimed invention.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishizawa et al. (U.S. 5,547,804) disclose liquid toner comprising carrier liquid having Kauri-Butanol number less than 30, charge control agent, copolymer resin particles, and colorant.

Ikeda et al. (U.S. 6,417,283) disclose carbon black grafted with polymer that is suitable for use in toner composition.

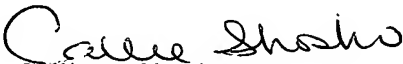
Qian et al. (U.S. 2002/0128349) disclose liquid ink comprising carrier liquid having Kauri-Butanol number less than 30, charge control agent, organosol, and pigment such as carbon black which is surface treated by the resin core of the organosol which is obtained from nitrogen-containing polymerizable monomers such as dialkylaminoalkyl (meth)acrylate and vinyl pyrrolidone. However, given the effective filing date of the reference, it is not applicable against the present claims under any subsection of 35 USC 102.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
July 12, 2003